

## INTERACTIVE SYSTEM FOR PROCESSING VIEWER RESPONSES TO TELEVISION PROGRAMMING

### BACKGROUND OF THE INVENTION

The present invention relates to interactive systems and particularly to a system for processing viewer responses to television programming on a real time or pseudo real time basis.

Television is currently the dominant medium for disseminating entertainment and information to the general public. The television set has become a virtual necessity in almost every household. Viewers spend an average 6.5 hours each day passively watching a wide variety of programming including sitcoms, movies, sports, news and so on. Substantially all television programs disseminated by broadcasters are financed by businesses that buy time from television broadcasters to advertise goods and services. Currently, television advertisers are limited to gross impression advertising which does not provide any direct information as to the effect of their commercials on the viewing public.

It would be highly beneficial to TV advertisers and TV viewers if they could interact on a real time basis, for example, at the times commercials are aired. Advertisers could know which viewers are reacting favorably to their commercials, and viewers could respond directly to advertisers in order to make a purchase and obtain a receipt or other information. In this way, consumer-interactive direct response advertising could be achieved.

In addition to direct response advertising, viewer-interactive television has a multitude of other applications, such as polling, voting, education, game playing, etc.

### SUMMARY OF THE INVENTION

It is an objective of the invention to provide an interactive system for processing viewer responses to television programming on a real time or pseudo real time basis. To achieve this objective, the interactive system of the invention comprises a central exchange where a database is stored. This database contains a plurality of first codes uniquely identifying various television programs, a plurality of second codes uniquely identifying consoles located in residences of television viewers, specific program data associated with each first code, and specific console data associated with each second code.

Each console is connected in the path of TV signals to a television receiver and includes a code reader capable of reading the first codes embedded in the TV signals going to the television receiver. The console also includes a register containing the second code identifying the particular console and a controller. When a viewer sees a program, such as a commercial that is of interest and desires to interact with the video to make a purchase or request information regarding the product or service being advertised, he or she responds by signalling the controller. In response, the controller causes the first code currently being read by the code reader and the stored second code to be transmitted to the central exchange. The central exchange then searches the database to determine that the first code is being received from a valid console and to locate the specific program data associated with the received first code. The central exchange computer then retrieves the spe-

cific program data associated with the received first code and the specific console data associated with the located second code. Using the retrieved console data, which may include console address information, credit card or other billing information, the retrieved program data is sent to the responding viewer.

In accordance with a feature of the invention, the central exchange and each of the consoles are equipped with a computer and a facsimile apparatus, thereby enabling the central exchange to promptly transmit the retrieved program data to the responding viewer by facsimile transmission. Alternatively, rather than facsimile apparatus, each console can be equipped with a printer to produce a hard copy of the retrieved program data transmitted from the central exchange computer to the console computer in the form of electronic mail.

Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the system particularly pointed out in the written description and claims hereof as well as the appended drawings.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention.

The accompanying drawings are included to provide a fuller understanding of the invention and are incorporated in and constitute a part of this specification, illustrate an embodiment of the invention and, together with the description, serve to explain the principles of the invention.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of a viewer interactive television system constructed in accordance with the present invention; and

FIG. 2 is a block diagram of a viewer console included in the system of FIG. 1.

### DETAILED DESCRIPTION

The viewer interactive television system of the present invention includes, as seen in FIG. 1, a central exchange 10 that includes a computer 12 which receives TV viewer responses from consoles 14 at various viewer locations 15 over phone lines 16, and through a transfer switch 18 and, in response to viewer responses, retrieves information requested by the responding viewers from a database 20. The retrieved information is sent by a facsimile apparatus 22 back to the consoles of the responding viewers via a switch 18 and phone lines 16. It will be appreciated that, rather than phone lines, communications between the central exchange and the consoles may be conducted over cable television lines or via wireless transmissions.

Each console 14 is connected in the path of TV signals transmitted by a television broadcaster 24 to a television receiver 26 through a TV cable converter or TV tuner 28 and a video cassette recorder (VCR) 30 in typical viewer residences. For viewers that are not cable television subscribers, over-the-air TV signals are picked up by antenna 32 and fed to television receiver 26 through TV tuner 28 and console 14. It will be appreciated that, in some cases, a VCR will not be serially connected to the input side of console 14. As a matter of